



# BOHL CRANE | TH PLASTICS CUSTOM ENGINEERING

## CASE STUDY

### BOHL CONTINUES HISTORY OF R&M INSTALLATIONS AT PLASTICS FIRM

Bohl Crane has been an R&M Materials Handling Master Distributor for over 20 years, and in that time, they have used R&M's crane components to partner with thousands of companies to provide custom solutions for overhead lifting challenges and projects.

Recently Bohl Crane completed a third major custom engineered overhead lifting equipment installation at TH Plastics, Inc's Bowling Green, Ohio plant location. TH Plastics is an injection molding company that manufactures decorative solutions for the appliance, automotive, industrial and consumer products industries. Part of TH Plastics' mission statement is to provide quality products at a competitive price using the newest technologies and world class quality systems all in a safe working environment. Bohl Crane has mirrored that mission statement over the past six years in their engineering and design plans to assist TH Plastics to incorporate several new overhead lifting systems into their manufacturing process.





# THE APPLICATION

In 2013, Bohl Crane developed a specialized lifting solution for the manufacturing floor at TH Plastics by installing a custom-built 15-ton double girder bridge crane. Since that time, they have provided two additional customized 15-ton double girder bridge cranes, a 200 ft extension to the runway and conductor electrification system, and most recently a custom engineered 20-ton double girder bridge crane as part of the overall solution to increase productivity and output by maximizing the existing manufacturing space vertically and horizontally.

Each crane also needed to be rated to Crane Manufacturers Association of America (CMAA) Class C duty which was required to meet the specific challenges of the TH Plastics working environment.





# THE CHALLENGE

TH Plastics provided more than one challenge for Bohl Crane to contend with over the past six years. Not only were existing runways in the manufacturing area not utilizing the buildings full lifting capabilities, but some of their custom machinery was taller than the runways themselves which posed major lifting issues. Bohl Crane was able to rise to those challenges with the previously installed custom-made 15-ton cranes and the 200 ft runway expansion project.

However, as TH Plastics' business continued to grow through the years, the manufacturing requirements grew as well. The most recent lifting challenge to resolve with an increased capacity up to 20-tons that would require an additional crane to be installed on the existing runway while maximizing the use of the already limited manufacturing space.

Not only was the additional weight from the 20-ton crane a challenge, but also limiting the allowable load of the new crane to sections of runway that were reinforced for a 20-ton load.





# THE SOLUTION

In 2019, Bohl Crane provided the plastics company with an additional 20-ton customized crane for the previously expanded runway. They turned to R&M to assist in a custom solution to add the additional crane while avoiding any major adjustments to the existing runways.

Dave Haase, an Account Manager at Bohl Crane explained that like the 15-ton cranes, the 20-ton crane would need to be “stooled up” meaning that there would need to be a spacer added between the end truck and bridge girder to gain additional height of lift due to the low elevation of the existing runways in the building. He also stated, “We do not do many stooled bridge girder cranes, but when we do, we note that the costs associated with raising the entire runway system are much higher than stooling the crane itself.” However, this combination of stooling the crane with the increased capacity to 20-tons created additional obstacles especially with the need to add the crane to the existing runway.





Haase stated that, “the 20-ton crane project required an engineering analysis of the existing building and runway systems.” He also added that due to the analysis results “in the manufacturing area, we completed reinforcement of the existing runways and minimal modifications to the building steel.” With the help of R&M’s team, the wheel loads were spread out along the runway with a long wheelbase end truck and extended trolley gauge.



Bohl was able to limit the allowable load of the new crane in certain sections by installing R&M’s advanced safety features of zone control and collision avoidance technology. This solution would restrict the weight allowed in certain zones of the runway that had not been reinforced for 20-tons, while also keeping all cranes on the runway a specified distance apart to ensure that no single section of the runway could be overloaded. Haase commented that, “Radio control was added to make it easier for the operator to move the cranes around the equipment. The collision avoidance was added to keep the cranes apart to avoid overloading the runways and building steel as they were only designed for one crane per bay.”





## THE RESULTS

Bohl Crane and R&M collaborated to provide a unique solution to the material handling demands of the ever-evolving TH Plastics' facility. A custom solution was provided that maximized the existing building layout, increased productivity, and provided a safe operating space for employees, all while minimizing expansion costs.

Bohl Crane continues to provide inspections and repairs for TH Plastics, Inc. and plans to assist in any future expansion projects as the innovative company continues to grow.